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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/439,061	11/12/1999	ROBERT J. PROEBSTING	939A-350-1-2	1190

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EXAMINER	
YENKE, BRIAN P	
ART UNIT	PAPER NUMBER
2614	15

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/439,061	PROEBSTING, ROBERT J.	
	Examiner	Art Unit	
	BRIAN P. YENKE	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Request for Reconsideration (07 Aug 03)* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. This "Supplemental Action" is a supplement to the Non-Final Rejection (paper #14), mailed 15 September 2003. The application was in "After Final Status", and was inadvertently signed by the examiner, where the Non-Final Rejection (being After Final) requires the signature of an examiner with full signature authority. Therefore, this supplemental action proposes no substantive changes to the previous office action (paper #14), only the change of the examiner signing the office action.

THIS WAS NOT NECESSARY MPEP 1005

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over May, US 5,815,168 in view of Lu et al., US 5,781,200.

In considering claims 20-23,

1) the claimed segmenting a plurality of pixels...is met controller 510 which is coupled to host CPU 540, and transfers data to display memory 550 via memory controller 520,

where the pixels may be ordered within a row of memory in a scan-line format (left to right, top to bottom) or in another format are stored in a tiled address format

2) the claimed storing data representing each of said plurality of pixel groups is met by display memory 550 which stores the tiled pixels.

However, May remains silent on the storing data in non-adjoining arrays. May discloses a "Tiled Memory Addressing With Programmable Tile Dimensions" where the tile shape and dimensions are optimized for sizes and shapes of blocks of pixel data to be transferred to the display memory (col 4, line 53-56). The tile dimensions which include tile size and tile height are programmable parameters stored in software (col 6, line 20-30). The parameters may also be determined by software depending upon video mode, resolution, and pixel depth. As defined by May, tile size(aspect ratio) is the number of pixels in a tile which is the same as the number of pixels which may fit into one row of the DRAM array. Also, May discloses that subsequent accesses to data words in different columns of the same row (column accesses) are much faster than accesses to different rows. May discloses depending upon the graphics or video image to be displayed a sequential scan-line based addressing scheme may create a bottleneck when data is input into the memory (col 2, line 28-41).

The examiner incorporates Lu et al., US 5,781,200 which discloses that within a DRAM there is a single row of sense amplifiers so rows of the same array conflict since they (rows of the same array) cannot be open at the same time (abstract, col 9, line 35-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify May, which discloses a system which optimizes tile shape and dimensions for pixel data to be in stored in memory based upon the video mode, resolution and pixel depth, with Lu, by storing the pixels of one row into non-adjoining arrays since rows of the same array cannot be open at the same time, to provide a memory which would provide faster access time and prevent bottlenecking from occurring.

In considering claims 24-25,

May does not specifically disclose, dividing the display panel into a first half and a second half. May discloses a system where a depending upon the application type, a particular tile size (i.e. aspect ratio) may provide optimal performance depending upon the type of data being transferred. Where transfers of text data may perform optimally with long, narrow tiles for text and graphical images and video on the other hand may be optimized using taller more rectangular or square tile shapes.

The examiner incorporates Lu et al., US 5,781,200 which discloses that within a DRAM there is a single row of sense amplifiers so rows of the same array conflict since they (rows of the same array) cannot be open at the same time (abstract, col 9, line 35-38).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify May which discloses a system which divides the pixel data into an appropriate tile shape/size based upon the type of video mode, resolution, pixel

depth of the signal, with Lu, by storing the pixels of one row into non-adjoining arrays since rows of the same array cannot be open at the same time, where a display panel can be divided up into a first half and second half in order to store the pixels into non-adjoining arrays to provide a memory which would provide faster access time and prevent bottlenecking from occurring.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lim, US 5,291,443 discloses a memory array configuration of memory cells that allows simultaneous read and refresh of the memory cells.

Buckelew et al., US 5,864,512 discloses a "High Speed Video Frame Buffer Using Single Port Memory Chips" where the buffer memory is subdivided into a plurality of blocks, each block corresponding to a region of the display.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 305-4700.

B.P.Y
September 22, 2003

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600